

Notice of Allowability

Application No.

10/624,340

Examiner

Nguyen T. Ha

Applicant(s)

MCCLURE ET AL.

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/9/2007.
2. ☒ The allowed claim(s) is/are 1,5-41,52,55-63 and 71-78.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 0703 + 1205.
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

NGUYEN T. HA
PRIMARY EXAMINER

DETAILED ACTION

Response to Arguments

1. The applicant's argument that Moradi et al. failed to disclose a capacitor construction comprising an insulative nitride layer between a first electrode and a surface supporting the capacitor construction. The examiner finds this argument persuasive. Therefore, the examiner made decision to allow this limitation over the prior art of record.

Allowable Subject Matter

2. Claims 1, 5-41, 52, 55-63, and 71-78 are allowed.

The following is an examiner's statement of reasons for allowance:

With respect to claims 1,5, 8-11, 52, 55, 57-58, 71-72 and 75-76 the prior art alone or in combination does not teach the limitation of a capacitor construction comprising a conductive nitride layer between a first electrode being in conductive contact with the nitride layer, and a second electrode over the capacitor dielectric, the capacitor construction exhibiting a lower RC time constant compared to an otherwise identical capacitor construction lacking the conductive nitride layer.

With respect to claims 6,7, 12, and 56, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising an insulative nitride layer between a first electrode and a surface supporting the capacitor construction, a capacitor dielectric over the first electrode.

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With respect to claims 13-23, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a rough silicon layer, a nitride layer under the rough silicon layer, a capacitor dielectric over the rough silicon layer.

With respect to claims 24-33, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a conductive rough silicon layer over a support surface, a nitride layer between the rough silicon layer and the support surface, a first electrode comprising the rough silicon layer.

With respect to claims 34-41, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a composite first electrode comprising a first conductive layer over and in conductive contact with the storage node and comprising a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer.

With respect to claims 59-63, the prior art alone or in combination does not teach the limitation of a capacitor construction forming method comprising: forming a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer and the first conductive layer and polysilicon layer being comprised by a composite first electrode.

With respect to claims 73-74 and 77-78, the prior art alone or in combination does not teach the limitation of a memory device comprising: a composite first electrode comprising a first conductive layer over and in conductive contact with the storage node

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and a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Citation Relevant of Prior Art

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Kijima et al. (US 6,563,691) disclose mounting structure for capacitors.
- b. Le et al. (US 6,262,469) disclose capacitor for use in a capacitor divider that has a floating gate transistor as a corresponding capacitor.
- c. Embree (US 5,187,637) discloses monolithic high-voltage capacitor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Ha whose telephone number is 571-272-1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext. 31. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NGUYEN T. HA
PRIMARY EXAMINER

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June 15, 2007